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# PROPELLER SHAFT AND UNIVERSAL JOINTS

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**GENERAL INFORMATION**

N16BAAB

The 2-joint type propeller shaft has been adopted. The universal joint includes a grease nipple for easy lubrication.

**SPECIFICATIONS**

**GENERAL SPECIFICATIONS**

N16CA--

Items	Vehicles with a manual transmission	Vehicles with an automatic transmission
Propeller shaft		
Type	2-joint type	2-joint type
Length × O.D. mm (in.)		
Front	665 × 50.8 (26.2 × 2.0)	741 × 50.8 (29.2 × 2.0)
Rear	598 × 71.8 (23.5 × 3.0)	522 × 71.8 (20.6 × 3.0)
Universal joint		
Type	Cross type	Cross type
Bearing	Oiled needle roller bearing	Oiled needle roller bearing
Journal O.D. mm (in.)	14.7 (.58)	14.7 (.58)

**SERVICE SPECIFICATIONS**

N16CB--

Items	Specifications
Standard value	
Journal end play mm (in.)	0.06 (.0024)
Limits	
Propeller shaft runout (Dial indicator reading) mm (in.)	
Front	0.5 (.020)
Rear	0.6 (.024)

**TORQUE SPECIFICATION**

N16CC--

Item	Nm	ft. lbs.
Flange yoke attaching bolts	50–60	36–43

**LUBRICANTS**

N16CD--

Items	Specified lubricant	Quantity
Universal joint	Multipurpose grease SAE J310, NLGI No. 2	As required
Sleeve yoke surface	Hypoid gear oil SAE80, 75W-85W conforming to API GL-4 or higher	As required

**SPECIAL TOOL**

N16DA--

Tool (Number and name)	Use
MB990840-01 Universal joint remover and installer set 	Removal and installation of journal bearing

**TROUBLESHOOTING**

N16EAAA

Symptom	Probable cause	Remedy	Reference page
Noise at start	Worn journal bearing Worn sleeve yoke spline	Replace	16-6
	Loose propeller shaft installation	Retighten	16-4
Noise and vibration at high speed	Unbalanced propeller shaft	Replace	16-4
	Improper snap ring selection	Adjust the clearance	16-8
	Worn journal bearing	Replace	16-6

# PROPELLER SHAFT

N16GA--

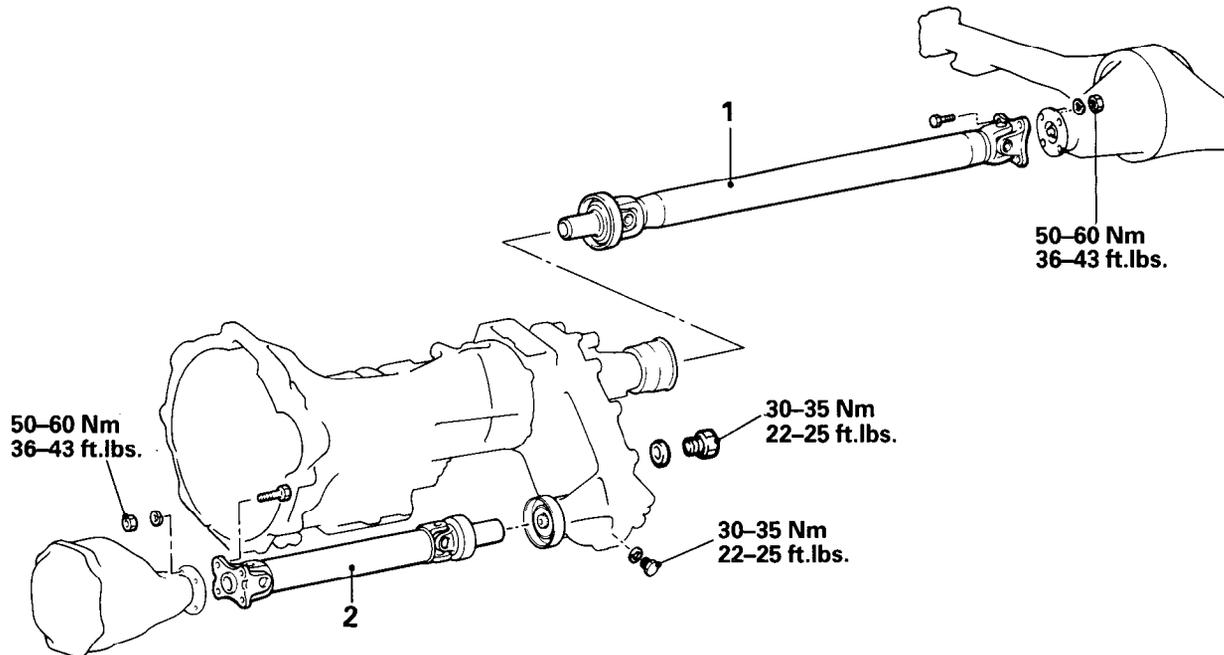
## REMOVAL AND INSTALLATION

### Pre-removal Operation

- Draining of the Transfer Gear Oil

### Post-installation Operation

- Supplying the Transfer Gear Oil (Refer to GROUP 21 TRANSMISSION - Transmission and Transfer Case.)



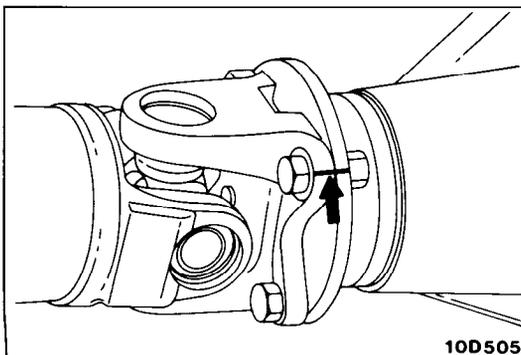
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### Removal steps

- ◄◄ ◄◄ 1. Rear propeller shaft
- ◄◄ ◄◄ 2. Front propeller shaft

### NOTE

- (1) Reverse the removal procedures to reinstall.
- (2) ◄◄ : Refer to "Service Points of Removal".
- (3) ◄◄ : Refer to "Service Points of Installation".



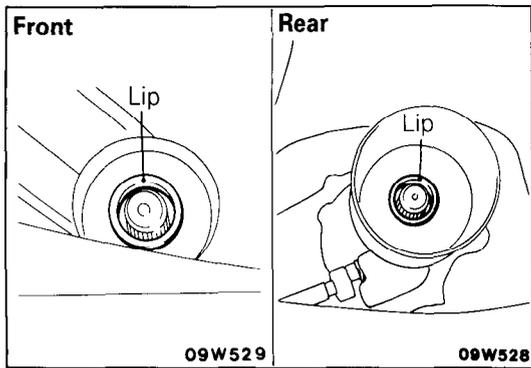
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## SERVICE POINTS OF REMOVAL

N16GBAB

### 1. REMOVAL OF REAR PROPELLER SHAFT/2. FRONT PROPELLER SHAFT

- (1) Place the free wheel hubs in the FREE position and set the transfer lever to "2H".
- (2) Make mating marks on the flange yoke and the differential companion flange.



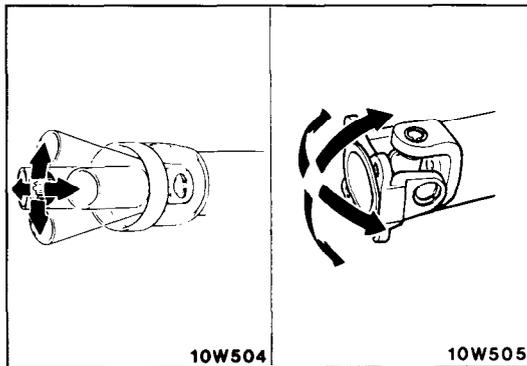
**Caution**

1. Be careful not to damage the lip of the transmission oil seal or the lip of the transfer case oil seal.
2. Do not allow foreign matter to enter the transmission or transfer.

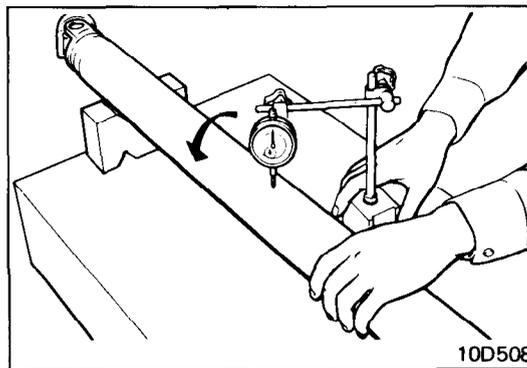
**INSPECTION**

N16GCAB

- Check the sleeve yoke and flange yoke for wear, damage or cracks.
- Check the propeller shaft yokes for wear, damage or cracks.
- Check the propeller shaft for bends, twisting or damage.



- Check the universal joints for smooth operation in all directions.

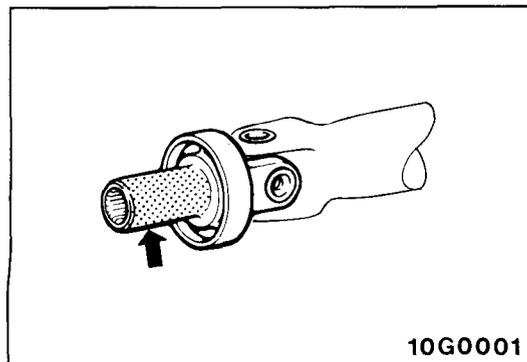


**CHECKING PROPELLER SHAFT RUNOUT**

Measure propeller shaft runout with a dial indicator.

**Limits**

<b>Front propeller shaft</b>	<b>0.5 mm (.020 in.)</b>
<b>Rear propeller shaft</b>	<b>0.6 mm (.024 in.)</b>



**SERVICE POINTS OF INSTALLATION**

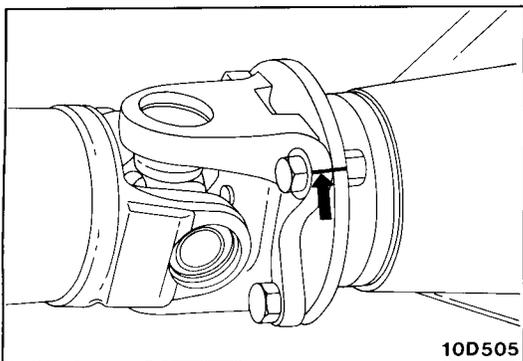
N16GDAC

**2. INSTALLATION OF FRONT PROPELLER SHAFT/1. REAR PROPELLER SHAFT**

- (1) Apply the specified hypoid gear oil to the sleeve yoke.

**Specified gear oil : Hypoid gear oil API classification GL-4 or higher/SAE viscosity 80W, 75W-85W**

## 16-6 PROPELLER SHAFT AND UNIVERSAL JOINTS – Propeller Shaft



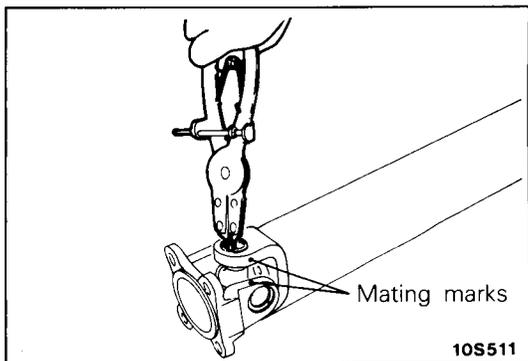
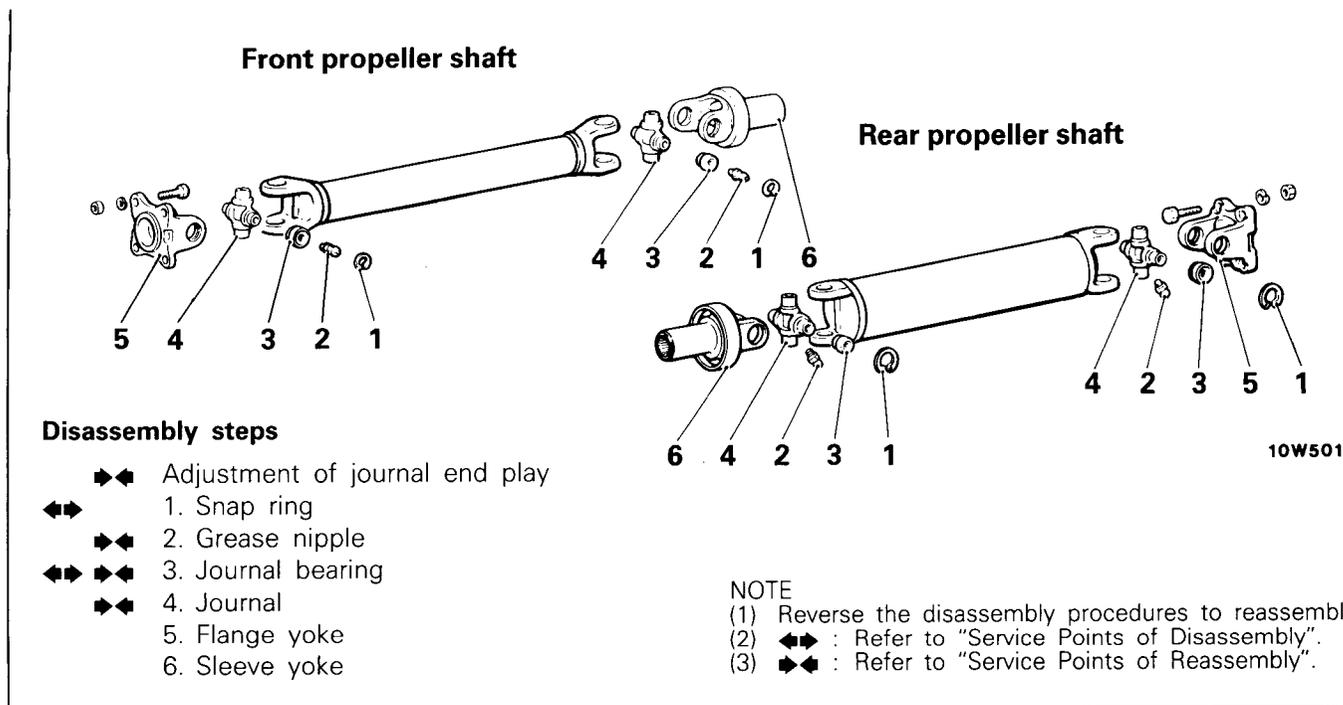
- (2) With the mating marks in alignment, install the propeller shaft to the companion flange.

### Caution

Decrease the thread of the mounting bolts and nuts before tightening these parts. Otherwise, they could become loose.

## DISASSEMBLY AND REASSEMBLY

N16GE--



## SERVICE POINTS OF DISASSEMBLY

N16GFAC

### 1. REMOVAL OF SNAP RING

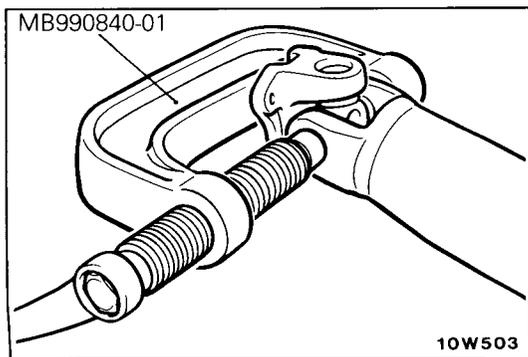
- (1) Make mating marks on the yokes of the universal joint that is to be disassembled.
- (2) Remove the snap rings from the yoke with snap ring pliers.

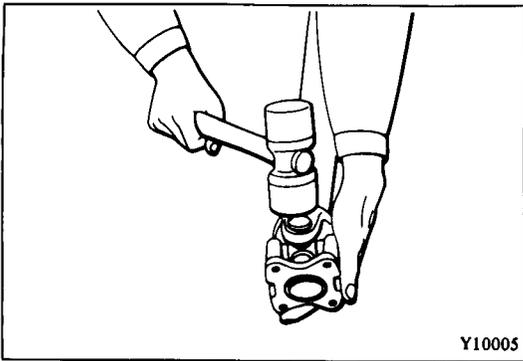
### Caution

When disassembling, note the positions of snap rings so that they may be reinstalled in the same positions.

### 3. REMOVAL OF JOURNAL BEARING

- (1) Remove the journal bearing from the propeller shaft yoke with special tool.

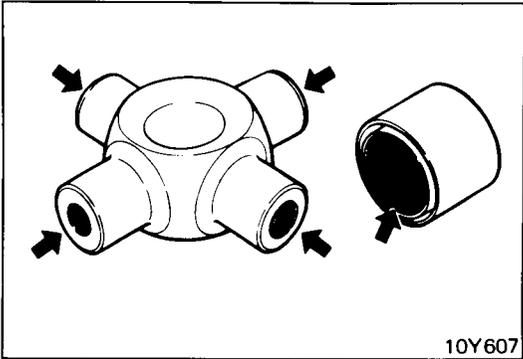




- (2) Remove the other journal bearing in the same manner as described above.

NOTE

If the journal bearing is hard to remove, strike the yoke with a plastic hammer as illustrated.



SERVICE POINTS OF REASSEMBLY

N16GHAC

4. INSTALLATION OF JOURNAL/3. JOURNAL BEARING

- (1) Apply the specified grease to the following parts;

- ① Shafts and grease sumps of journal
- ② Dust seal lips
- ③ Needle roller bearings

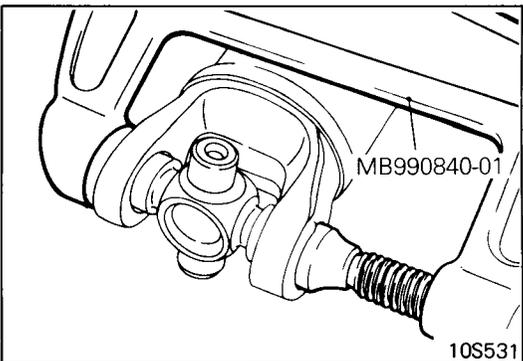
**Specified grease : Multipurpose grease SAE J310, NLGI No. 2**

Caution

**Use of excessive amounts of grease may result in difficulty in assembling unit and incorrect selection of snap rings.**

NOTE

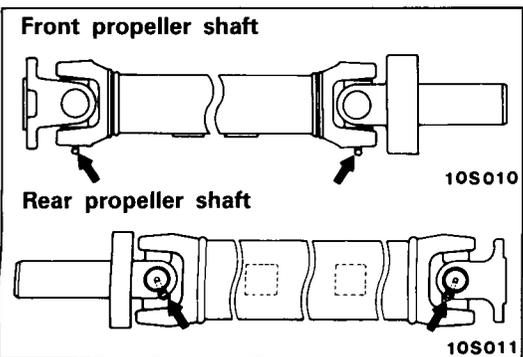
When the journal and journal bearing are replaced, obtain the universal joint kit.



- (2) Press the journal bearing to the yoke with special tool as illustrated.

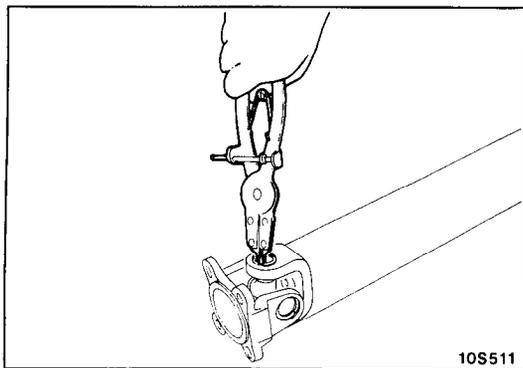
NOTE

Be sure to align the mating marks on the yokes.



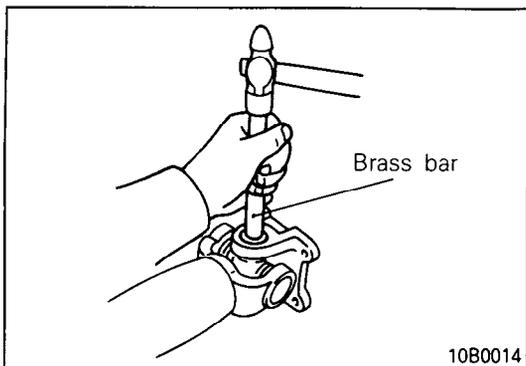
2. INSTALLATION OF GREASE NIPPLE

With the grease nipple directed as shown in the illustration, install it properly.

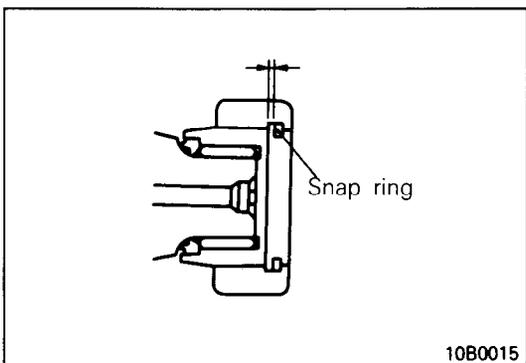


- **ADJUSTMENT OF JOURNAL END PLAY**

- (1) Install snap rings of the same thickness onto both sides of each yoke with snap ring pliers.



- (2) Press the bearing and journal into one side with the brass bar.



- (3) Measure the clearance shown in the illustration with a feeler gauge. If the clearance exceeds the standard value, the snap rings should be replaced.

**Standard value : 0.06 mm (.0024 in.)**